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CORONARY ARTERY DISEASE

This study investigates whether post-traumatic stress disorder (PTSD) is associated with coronary heart disease (CHD). Male twins from the Vietnam Era Twin registry that were discordant for a lifetime history of PTSD and major depression were studied. A total of 562 twins (281 pairs with mean age 42.6 years) were included. The incidence of CHD was more than double in twins with PTSD (22.6%) than those without PTSD (8.9%, $p < 0.001$). Stress total severity score from myocardial perfusion by positron emission tomography was significantly higher and coronary flow reserve was lower in twins with PTSD than those without. Vaccarino and colleagues conclude that among Vietnam era veterans, PTSD is a risk factor for CHD.

Editorial Comment: Stephen Sidney, p. 979

CORONARY ARTERY DISEASE

Lamberts and colleagues investigate the risk of thrombosis and bleeding of multiple antithrombotic treatment regimens in atrial fibrillation (AF) patients post-myocardial infarction (MI) or after undergoing percutaneous coronary intervention (PCI). A total of 12,165 AF patients hospitalized with MI or undergoing PCI were identified, and risk of MI/coronary death, ischemic stroke, and bleeding according to antithrombotic treatment regime was estimated. Within 1 year, MI or coronary death, ischemic stroke, and bleeding events occurred in 2,255 (18.5%), 680 (5.6%), and 756 (6.3%) patients, respectively. Relative to triple therapy (oral anticoagulation [OAC] + aspirin + clopidogrel), no increase in risk of recurrent coronary event was seen for OAC + clopidogrel, OAC + aspirin, or aspirin + clopidogrel, but aspirin + clopidogrel resulted in higher risk of ischemic stroke. When compared to triple therapy, bleeding risks were nonsignificantly reduced for OAC + clopidogrel and significantly reduced for aspirin + clopidogrel. The authors conclude that in real-life AF patients with indication for multiple antithrombotic therapy after MI/PCI, OAC + clopidogrel was equal or better on both benefit and safety outcomes compared with triple therapy.

Editorial Comment: Steven M. Markowitz, p. 990

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BIOMARKERS

Release Kinetics of MicroRNAs **992**

Christoph Liebetrau, Helge Möllmann, Oliver Dörr, Sebastian Szardien, Christian Troidl, Matthias Willmer, Sandra Voss, Luise Gaede, Johannes Rixe, Andreas Rolf, Christian Hamm, Holger Nef

Liebetrau and colleagues analyze the first-time release kinetics of muscle-enriched and cardiac-specific microRNA, a potential biomarker in patients with acute myocardial infarction (AMI). Release kinetics of circulating muscle-enriched miRNAs (miR-1, miR-21, miR 208a, and miR 133a) were analyzed in 21 patients with hypertrophic obstructive cardiomyopathy undergoing transcoronary ablation of septal hypertrophy. Circulating concentration of miR-1 significantly increased (>3-fold; $p = 0.01$) after 15 min with peak 75 min after septal ablation. Concentration of miR-133a were significantly increased at 15 min and reached a plateau between 75 min and 480 min (>50-fold change). The miR 208 concentrations were elevated at 105 min (>2-fold) without further increase. The authors conclude that miR-1, miR 208a, and miR 133a continuously rose during the first hours after the induction of AMI and may be potentially useful as biomarkers in patients with acute coronary syndrome.

Editorial Comment: Luigi M. Biasucci, Maria Teresa Cardillo, p. 999

HEART VALVE DISEASE

Aortic Stenosis Epidemiology and TAVR Candidates **1002**

Ruben L. J. Osnabrugge, Darren Mylotte, Stuart J. Head, Nicolas M. Van Mieghem, Vuyisile T. Nkomo, Corinne M. LeReun, Ad J. J. C. Bogers, Nicolo Piazza, A. Pieter Kappetein

The objective of this study was to evaluate the prevalence of aortic stenosis (AS) in the elderly and to estimate the current and future number of candidates for transcatheter aortic valve replacement. Data from 7 studies were used (n = 9,723). Monte Carlo simulations were performed to estimate number of transcatheter aortic valve replacement (TAVR) candidates. The pooled prevalence of severe AS in the elderly was 12.4%, while the prevalence of severe AS was 3.4%. Among elderly patients with severe AS, 75.6% are symptomatic and 40.5% of these patients are not treated surgically. Of the patients referred for TAVR that actually received a transcatheter valve, the European pooled percentage was 40.3% and the U.S. pooled percentage was 24.4%. Based on the data and estimates, the authors conclude that there are currently approximately 190,000 and 100,000 TAVR candidates in European countries and North America, respectively, and each year approximately 18,000 new TAVR candidates emerge in European countries and 9,000 in North America.

Editorial Comment: Alec Vahanian, Bernard Iung, Dominique Himbert, p. 1013

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HEART RHYTHM DISORDERS

Electrical Storms of Idiopathic VF and J Waves 1015

Yoshifusa Aizawa, Masaomi Chinushi, Kanae Hasegawa, Nobu Naiki, Minoru Horie, Yoshiaki Kaneko, Masahiko Kurabayashi, Shogo Ito, Tsutomu Imaizumi, Yoshiyasu Aizawa, Seiji Takatsuki, Kunitake Joo, Masahito Sato, Katsuya Ebe, Yukio Hosaka, Michel Haissaguerre, Keiichi Fukuda

The aim of this study was to characterize patients with idiopathic ventricular fibrillation (IVF) who develop electrical storm (ES). Electrocardiographic features of 91 IVF patients with and without ES were studied. A total of 14 (15.4%) had VF occurring at out-of-hospital at night or in early morning. J waves were more closely associated with VF storm compared with patients without VF storm: 92.9% versus 27.1% ($p < 0.001$). VF storm was controlled by intravenous isoproterenol, which attenuated the J-wave amplitude. The authors concluded that VF storm in IVF patients was highly associated with J waves that showed augmentation prior to VF. Isoproterenol was effective in controlling VF and attenuating J waves. Subsequent antiarrhythmic therapy appeared to be effective for prophylaxis of VF.

CONGENITAL DISEASE

Coarctation of the Aorta: Lifelong Surveillance 1020

Morgan L. Brown, Harold M. Burkhart, Heidi M. Connolly, Joseph A. Dearani, Frank Cetta, Zhuo Li, William C. Oliver, Carole A. Warnes, Hartzell V. Schaff

The investigators review the long-term outcome of patients undergoing primary surgical repair of isolated aortic coarctation. A total of 819 patients operated on between 1946 and 2005 were identified. Mean age at repair was 17.2 ± 13.6 years. Actuarial survival was 93.3%, 86.4%, and 73.5% at 10, 20, and 30 years, respectively. Older age at repair (>20 years) and pre-operative hypertension were associated with decreased survival ($p < 0.001$). Freedom from reintervention on the descending aorta was 96.7%, 92.2%, and 89% at 10, 20, and 30 years of follow-up. The authors conclude that primary repair of isolated coarctation can be performed with low mortality. However, long-term survival is reduced and many patients will require further re-operation.